

In the discussion on this paper several delegates took part. Mr. W. M. Webb, of the Selborne Society, gave some particulars about a sanctuary in which his society was interested. He also agreed that private collecting, if done at all, should be started with the idea of benefiting the many instead of the few. Mr. William Gray, of the Belfast Naturalists' Field Club, spoke as to the destruction by collectors of the eggs of rare birds, which would breed if they were not disturbed, and how last season the club, through providing a watcher, had been successful in the case of a previously much harried species. Mr. J. Hopkinson mentioned that public bodies sometimes were gross offenders in their demands for large numbers of some rare plant from a local habitat, while the Rev. Ashington Bullen spoke as to the scarcity or extinction in certain haunts of species that were formerly plentiful. Mr. Harold Wager thought that the local societies could do much by encouraging a more scientific attitude towards collecting and by inducing a study of the habits and life-histories of the living organism in the field.

The second meeting of the conference of delegates was held on September 8, and was presided over, in the absence of Prof. Miers, by Prof. Grenville A. J. Cole, vice-chairman. At this meeting Prof. G. H. Carpenter introduced the subject of detailed natural-history surveys of restricted areas, an important work suitable for local societies. In his remarks he described the researches lately carried out into the natural history of the island of Lambay, off the coast of co. Dublin, and what was being done at the present time on the North Bull, a grass-covered sandbank in Dublin Bay, known to be less than a century old. Prof. Carpenter urged the importance of the study of such restricted areas as likely to help in the solution of many geographical problems. Several delegates having spoken, Mr. Frederick Long, of the Norfolk and Norwich Naturalists' Society, directed attention to the fact that a few years ago Mr. Robert Gurney established a small laboratory on Sutton Broad, in Norfolk, for the use of anyone wishing to prosecute research work in that area.

Mr. Henry Davey then read his paper on the advisability of re-stocking haunts whence fauna and flora have disappeared. His main contention was that in the case of many of the rarer Lepidoptera, with which alone he was thoroughly familiar, their disappearance or extinction was not so much due to man, but to natural causes, the reason of which in most cases had not yet been discovered. He instanced the case of the large copper, which disappeared in one locality through man, but in the other from no such cause, although he mentioned that a great fen-fire had been blamed. As for the growing rarity of many species, he thought that much destruction was caused by the ease with which the present-day collector was able to get about, but, speaking of the large blue—*Lycæna arion*—which had been killed off in most of its localities, he said that while collectors had caused its extinction at Barnwell Wold, its favourite habitat, it had also disappeared from another resort in Northamptonshire to which the public had no access. Of this insect also he mentioned Mr. Frohawk's discovery in 1903, at its breeding ground in Cornwall, of the caterpillars living on thyme growing on or near ant hills, into which the full-grown larvæ descended so that the ants might remove a secretion which seemed deleterious to their health. As to re-stocking, he considered that it was of little value in the present state of our knowledge. The swallow-tailed butterfly, which in England is now restricted to a small area in the fens, from his observation on the Continent seemed to flourish among or near wooded hills, and never in the flats. However, no success resulted from the attempt to establish it on a large scale in the Peak of Derbyshire and in Devonshire.

Again, an insect which may be far from rare, in certain spots favours such a small area that it may be measured by yards, notably a locality in Sussex, where the marbled white is extremely common in a tract about eighty yards square. Again, in the case of the clouded yellows, in some years the two species may be exceedingly abundant; in the intermediate time not a specimen is to be seen. In such a case re-stocking would be of no use, while the disappearance of the insects has not been caused by man.

Finally, Mr. Davey considered that, on the whole, the experiment of re-stocking former haunts was worth the attempt, although from what he had mentioned success was not assured. Such work ought to be undertaken, however, in a scientific spirit, and exact records should be kept. It was also highly desirable that the re-stocking should be tried in two places at the same time a few miles apart, and that individuals should be brought from different localities to avoid, so far as possible, the danger of in-breeding.

Prof. Carpenter during the discussion directed attention to the fact that the species that tended to become extinct were those of commercial value, while Prof. Cole thought that stocking localities with species that had not previously lived there would nullify much of the work on their natural distribution. Under the head of the introduction of insects to localities where they had become extinct or were becoming scarce, Mr. W. P. Stebbing directed attention to what was being done by Mr. Henry Preston, of Grantham. He had collected a large number of the caterpillars of the Peacock butterfly from clumps of nettles, which were always destroyed by the farmers before the insects were full grown, had kept them until they turned into chrysalises, and then on emerging as perfect insects had turned them loose in seemingly suitable spots.

Arising out of the previous papers, the Rev. J. O. Bevan brought forward the following resolution:—"That this Conference of Delegates of Corresponding Societies affirms the desirability of bringing under the notice of local societies the necessity for preserving the fauna and flora of their respective districts as against wanton destruction or careless and needless collecting." This was seconded by Mrs. Hobson, and carried unanimously.

At the close of the meeting Mr. F. A. Bellamy (Ashmolean Natural History Society of Oxfordshire), who had had his notes printed as a paper for distribution to the meeting, exhibited his method for the permanent recording of natural history or other observations by means of the card-catalogue system. In explaining the value to workers of such a catalogue, he said that care was needed when outlining such a scheme so that it would retain its usefulness whatever the size. He also gave an estimate of the cost of one unit (tray, cards, and cover) of the catalogue.

#### UNIVERSITY AND EDUCATIONAL INTELLIGENCE.

CAMBRIDGE.—At the annual general meeting of the Philosophical Society, held on October 26, Prof. Sedgwick was elected president of the society.

It is proposed to confer the degree of Master of Arts, *honoris causa*, upon Prof. W. J. Pope, F.R.S., professor of chemistry, and upon Mr. K. J. J. Mackenzie, lecturer in agriculture.

Mr. R. C. Punnett has been appointed demonstrator of animal morphology for the year ending Michaelmas, 1909, and Mr. F. H. Potts demonstrator of comparative anatomy.

LONDON.—Prof. E. A. Minchin will represent the University at the Darwin centenary celebration at Cambridge next June.

At the meeting of the Senate on October 21 the degree of D.Sc. was granted to David Forsyth, of Guy's Hospital, as an internal student, for a thesis entitled "The Parathyroid Glands"; to Samuel J. M. Auld, of East London College, as an internal student, for a thesis entitled "The Hydrolysis of Amygdalin by Emulsin"; to Henry Bassett, an external student, for a thesis entitled "Contributions to the Study of the Calcium Phosphates"; and the degree of B.Sc. by research to Joseph Yates, Municipal Technical School, Blackburn, an external student, for research work in organic chemistry.

A university course of eight lectures on "Some Problems of General Physiology, more Particularly those Associated with Muscle," was commenced by Dr. F. S. Locke, in the physiology laboratory of the University, on October 20. A university course of three lectures by Mr. R. Lydeker, F.R.S., on "The Living and Extinct Faunas of Africa and South America," commenced on October 28 at University College. A university course of eight lectures

on "Algal Flagellates," by Dr. F. E. Fritsch, commenced at University College on October 26. Admission to these lectures is free to the public.

OXFORD.—Prof. C. F. Jenkin, professor of engineering in the University, delivered his inaugural address on October 16. No teaching, he said, is sufficient to fit a man for an engineer's various duties. The scientific theory of engineering can be taught, but the no less necessary experience must be gained outside the university. Prof. Jenkin described the teaching of engineering, showing that while the subjects are familiar, the engineering method of teaching differs somewhat from the traditional method. He advocated the use of examples chosen from apparatus which the student can handle rather than from the imaginary astronomical bodies often used to illustrate dynamical principles. In the Oxford laboratory the art of measurement will be taught. It will not be a model shop, but a shop may be used in conjunction with the laboratory for repairing and adjusting apparatus. It is also intended to have surveying classes during the vacation. Prof. Jenkin also explained the details of the scheme which has been prepared for carrying out engineering teaching in Oxford. It is intended that engineering students shall take the science preliminary examination and then proceed to a final honour school in engineering. The necessity for having a final honour school for the student to work for was urged, and there is every reason to believe that the scheme now being prepared will be received favourably, and thus open academic honours to engineers.

The Right Hon. A. J. Balfour, F.R.S., M.P., has been nominated by the Vice-Chancellor to deliver the Romanes lecture next year.

Dr. A. J. Evans, F.R.S., will resign the keepership of the Ashmolean Museum at the end of this year.

We have received from Prof. W. S. Franklin, of Lehigh University, a copy of the address he delivered at the annual meeting of the New York State Science Teachers' Association last year on the study of science by young people. In it he stigmatises as one of the greatest evils of present-day teaching of science the large proportion of time devoted to problems more or less completely detached from actual physical experience. He believes that the only quantitative physical laboratory work which should be done in a secondary school should relate to things of which the boy has knowledge in his everyday life outside the laboratory, and should be of practical value in that life. Thus, e.g., he would let a boy determine the speed of a runner by observing the time he takes to cover a measured distance, or the power he develops by the time he takes to climb a measured flight of stairs. He would set him to determine the discharge of water along a canal by timing a float from one station to another, and encourage him to measure the rainfall, record temperature, wind and cloud, and get together a great variety of similar data of practical everyday value.

THE Association of Teachers in Technical Institutions has forwarded to the Board of Education a memorandum directing attention to the conditions under which Whitworth scholarships and exhibitions are awarded. The council of the association has, after extensive inquiries, been led to the conclusion that the competitions at present are not in full accord with modern requirements of engineering study and training, and it has, in consequence, drawn up proposals for the modification of the methods of award. The objects of the proposals are to prevent cram and to provide systematic training, to give preference to engineering subjects, to encourage regular workshop practice in engineering over a period of thirty-six months, and to ensure greater prominence for study and practice in electrical engineering. Among other changes suggested are the introduction of a qualifying test, the holding of a special freehand drawing examination, the division of subjects into two groups and a new scale of marks, and the deletion of building construction and drawing and naval architecture from the list of subjects candidates may offer, as not strictly belonging to mechanical engineering. The annual general meeting of the association will be held at the St. Bride's Institute, Bride Lane, Fleet Street, E.C., on Saturday, November 7, commencing at 3 p.m.

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THE *Physikalische Zeitschrift* for October 15 contains a list of the lectures in mathematics, physics, and chemistry which are to be delivered during the coming winter session at the various universities and technical high schools of Germany and Austria. At the University of Berlin each of the above subjects is divided into ten or a dozen parts, and each part is placed under the charge of a separate professor or lecturer, who gives four or five lectures per week. Physics, for example, is divided into (a) experimental physics: (1) mechanics, sound, and heat; (2) magnetism and electricity; (b) theoretical physics: (3) introduction; (4) heat; (5) magnetism and electricity; (6) advanced portions; (7) vector analysis applied to physics; (8) potential theory; (c) (9) geophysics; (10) climatology. Under such a system it is possible for each lecturer to present his subject to his students in a much more complete and up-to-date manner than is possible in, let us say, the University of London, the professors of physics of which lecture probably twice as often per week and cover the whole subject in their lectures. Who in these circumstances can blame the post-graduate student who elects to go to Germany to complete his knowledge of his subject? and who can refrain from asking, when will the universities of this country be in a position to attract post-graduate students from Germany in return?

## SOCIETIES AND ACADEMIES.

PARIS.

Academy of Sciences, October 19.—M. Bouchard in the chair.—Precipitated silica: Henry **Le Chatelier**. The existence of hydrated forms of silica appears to be generally admitted, but this view does not appear to have any experimental basis. Various experiments with gelatinous silica are described, all tending to prove that silica exists always in the anhydrous state. The passage through filters is not due to the solubility of anhydrous silica or the presence of a soluble hydrate, but is due to its extremely fine state of division. In confirmation of this, it was found that silica jelly could be used for polishing metal sections.—The influence of the heating of urine on urinary toxicity: Ch. **Bouchard**, M. **Balthazard**, and Jean **Camus**. After heating urine to temperatures of 57° C. or above, the toxic power is diminished by one-third, as measured by experiments on rabbits. The freezing point of the urine is not affected by this heating.—The action of Saturn's ring: P. **Stroobant**.—The spectrum of Morehouse's comet, 1908c: A de la Baume **Pluvinet** and F. **Baldet**. A comparison of the spectra of the Daniel and Morehouse comets. The latter gives no trace of a continuous spectrum; the photograph shows seven monochromatic images of the comet, the wave-lengths of which are given.—Some properties of curved surfaces: A. **Demoulin**.—Directed waves in wireless telegraphy: A. **Blondel**. Referring to recent papers on this subject by MM. Tosi and Bellini, and by M. Turpain, the author points out that he dealt with this subject in a similar manner in 1903.—The electrolytic soda industry: André **Brochet**. A theoretical discussion of the electrolytic cell through which the electrolyte is flowing in a stream with a velocity equal to or greater than the velocity of the OH ions.—A new method of attacking iron alloys, and, in particular, the ferrosilicons: Paul **Nicolardot**. Chloride of sulphur is the reagent suggested for the solution of ferrosilicons or ferrotitaniums. Details are given of the method proposed, which is specially arranged to avoid loss of silicon.—The phenyl transposition. The migration of the naphthyl group in the iodo-hydrins of the naphthalene series: MM. **Tiffeneau** and **Daudel**. The migration of groups caused by the addition of hypiodous acid and subsequent removal of hydriodic acid has been found to occur in the naphthalene series in a manner quite analogous to that previously described for the benzene series. Descriptions are given of the preparation and properties of  $\alpha$ -allylnaphthalene, its isomer, propenynaphthalene,  $\alpha$ -naphthyl- $\alpha$ -propanal, methyl- $\alpha$ -naphthylacetic acid,  $\alpha$ -pseudoallylnaphthalene,  $\alpha$ -vinynaphthalene, and  $\alpha$ -naphthylethanal.—A modification of the preparation of methylamine by means of bromacetamide: Maurice **François**. It has been found advantageous to modify the original Hoffman method in several details.